AUTOPSY

DECEASED: AMES, WILLIAM D AUTOPSY #: A-18-199
AGE: 36 Year Old Caucasian Male
DATE OF BIRTH: 3-26-82
DATE OF DEATH: 11-11-18
DATE OF AUTOPSY: 11-13-18 @ 1000
SITE OF AUTOPSY: St. Francois County Missouri Morgue
Farmington MO
AUTHORIZATION: James Coplin, Coroner
St. Francois County

GENERAL EXAMINATION:

The body is received in a green body bag, and clothed in a blue t-shirt, which is inside-out, and blue jeans. The body is that of a well developed, well nourished-appearing adult Caucasian male, 70 inches in length, and weighing approximately 150 to 160 pounds.

EXTERNAL EXAMINATION:

Rigor mortis is present in the extremities, jaw, and neck. Lightly blanching livor mortis is present posteriorly. The deceased has dark brown scalp hair measuring ½ inch in length, along with a short growth of beard and mustache. The eyes are open. The conjunctivae are pale, and without petechiae. The corneae are clear, and the irides are blue/green. The ears, external auditory canals, and nose are unremarkable. The mouth is closed, and the teeth are natural.

The neck is without palpable masses, and the trachea is in the midline.

The chest is symmetrical. Just below the sternal notch is a 3 cm. scar.

The abdomen is flat, and without palpable organomegaly, or scars.

The external genitalia are normal for an adult male, and the penis is circumcised.

The upper and lower extremities are symmetrical and well formed.

EVIDENCE OF MEDICAL THERAPY:

Defibrillator pads are on the upper right chest, and lateral left chest.

(CONTINUED)

Exhibit O

EVIDENCE OF INJURY:

The buccal mucosa of both upper and lower lips show focal abrasion, up to 8 mm..

Subsequent autopsy of the head show no scalp contusions, or cranial fractures. There are no collections of blood in the cranial vault, and no cerebral contusions.

On the lateral left back near the axillary crease is a 10 x 3 cm. wedge-shaped abrasion. Extending anteriorly from this, through the axillary crease and onto the upper left chest is a 10 x 0.5 cm. curvilinear abrasion.

Subsequent autopsy of the chest and abdomen show no acute internal injuries, or collections of blood or fluid in the chest or abdomen.

ADDITIONAL INJURIES:

On the extensor surface of the right forearm is a 3 cm. abrasion. Around both wrists are crescent-shaped mixed contusions and abrasions, measuring up to 3 cm.. On the dorsal web space between the left thumb and forefinger is a 1 cm. abrasion. On the ventral, lateral right wrist is a 2.5 cm. abrasion. Around both ankles are crescent-shaped mixed contusions and abrasion, measuring up to 3 cm.. On the medial and dorsal right great toe is an 8 mm. abrasion.

INTERNAL EXAMINATION:

HEAD:

The scalp is incised and retracted. On the left parietal skull are multiple small white metal screws. The cranial vault is opened, and there is no epidural blood. The dura is gray-white, tough and pliable, and on opening, there is no subdural blood, and the cerebrospinal fluid is clear. The brain weighs 1380 grams. The cerebral hemispheres are symmetrical. On sectioning, there is no evidence of infection, tumor, or trauma. The dura is stripped from the basilar skull, and there are no basilar fractures.

BODY:

The body is opened with a Y-shaped incision, showing the organs of the thoracic and abdominal cavities to occupy their usual anatomic positions.

NECK:

There is no evidence of infection, tumor, or trauma. The airway is patent.

(CONTINUED)

DECEASED: AMES, WILLIAM D AUTOPSY #: A-18-199

INTERNAL EXAMINATION: (Continued)

CARDIOVASCULAR SYSTEM:

The heart weighs 390 grams. The shape of the heart is normal, and the epicardial surface is smooth. The major epicardial coronary arteries are sectioned, and all widely patent, and normal in distribution. The heart is sectioned, and the myocardium has a homogeneous tan-brown appearance. The cardiac valves are thin and delicate. The aorta and its major branches are unremarkable.

LUNGS:

The right lung weighs 690 grams, and the left lung weighs 660 grams. The pleural surfaces are glistening and pink-red. On sectioning, the parenchyma is congested. There are no foci of consolidation or tumor. No thromboemboli are seen.

GASTROINTESTINAL SYSTEM:

The esophagus, stomach, small and large bowel, and appendix are unremarkable. The stomach contains green/black liquid, and two wrinkled plastic fragments.

LIVER:

The liver weighs 1780 grams, and the capsular surface is smooth and dark brown. On sectioning, the parenchyma is congested. There are no masses. The gallbladder is unremarkable.

SPLEEN:

The spleen weighs 140 grams, and the capsular surface is smooth and purple-blue. On sectioning, the parenchyma is unremarkable.

PANCREAS:

Unremarkable.

ADRENAL GLANDS:

Unremarkable.

GENITOURINARY SYSTEM:

The right kidney weighs 160 grams, and the left kidney weighs 180 grams. The capsules strip with ease, showing smooth cortical surfaces. On sectioning, the cortices are not thinned. The collecting system, ureters, and bladder are unremarkable. The bladder contains 20 ml. of dark yellow urine.

(CONTINUED)

DECEASED: AMES, WILLIAM D AUTOPSY #: A-18-199

MICROSCOPIC EXAMINATION:

BRAIN:

Sections of the brain do not show inflammation, neoplasia, or vasculitis. There are no meningeal inflammatory infiltrates. No acute ischemic change is seen.

HEART:

Sections of the heart do not show inflammatory infiltrates, or acute ischemic change. There is no significant fibrosis.

LUNGS:

The lungs show congestion and edema. There are scattered pigmented macrophages in alveolar spaces.

LIVER:

The liver is congested.

SPLEEN:

The spleen is congested.

PANCREAS:

Autolyzed.

KIDNEYS:

The kidneys are mildly congested.

(CONTINUED)

DECEASED: AMES, WILLIAM D AUTOPSY #: A-18-199

SUMMARY OF FINDINGS:

I. Acute Methamphetamine Intoxication
   A. 3700 ng/ml of Methamphetamine in blood; Greater than 10,000 ng/ml of Methamphetamine in urine.
   B. Pulmonary congestion and edema.
   C. Acute passive congestion of the liver, spleen, and kidneys.
   D. Two wrinkled plastic fragments in stomach.

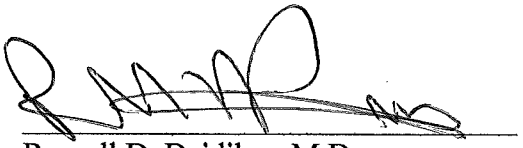
II. Multifocal Superficial Injuries
   A. 10 x 3 cm. wedge-shaped abrasion on left lateral back at axillary crease.
   B. 10 x 0.5 cm. curvilinear abrasion from left axillary crease upward onto chest.
   C. Crescent-shaped mixed abrasions and contusions on both wrists and ankles.
   D. Small superficial abrasions involving:
      1. Dorsum of left hand.
      2. Lateral right wrist.
      3. Dorsal right great toe.
   E. No associated internal injuries of head, neck, chest, or abdomen.

III. Additional Findings
   A. 2.5 mcg/ml of Carbamazepine (Tegretol) in blood; Therapeutic level.
   B. Marijuana and Metabolite in blood.
   C. Acetone in urine.

CONCLUSION:

In consideration of the circumstances surrounding the death, and after examination of the body, it is my opinion that William Ames, a 36 year old male, died as a result of acute Methamphetamine intoxication.

MANNER OF DEATH: Accident



Russell D. Deidiker, M.D.
Pathologist
Mineral Area Pathology LLC
Farmington MO

Enclosure:

RDD/ds/lm
12-4-18

NMS LABS

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Robert A. Middleberg, PhD, F-ABFT, DABCC-TC, Laboratory Director

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Toxicology Report

Report Issued 11/30/2018 09:00

To: **10699**
Mineral Area Pathology
Attn: Russell Deidiker, MD
P.O. Box 868
Farmington, MO 63640

Patient Name AMES, WILLIAM
Patient ID A18-199
Chain 18337489
Age ~~86~~ Y 31 **DOB** 03/26/1952
Gender Male
Workorder 18337489

Positive Findings:

Compound	Result	Units	Matrix Source
Carbamazepine	2.5	mcg/mL	001 - IVC (Inferior Vena Cava) Blood
Delta-9 Carboxy THC	5.7	ng/mL	001 - IVC (Inferior Vena Cava) Blood
Delta-9 THC	0.72	ng/mL	001 - IVC (Inferior Vena Cava) Blood
Phenylpropanolamine	20	ng/mL	001 - IVC (Inferior Vena Cava) Blood
Amphetamine	610	ng/mL	001 - IVC (Inferior Vena Cava) Blood
Methamphetamine	3700	ng/mL	001 - IVC (Inferior Vena Cava) Blood
Creatinine (Vitreous Fluid)	2.3	mg/dL	003 - Vitreous Fluid
Sodium (Vitreous Fluid)	149	mmol/L	003 - Vitreous Fluid
Potassium (Vitreous Fluid)	>20	mmol/L	003 - Vitreous Fluid
Chloride (Vitreous Fluid)	134	mmol/L	003 - Vitreous Fluid
Urea Nitrogen (Vitreous Fluid)	74	mg/dL	003 - Vitreous Fluid
Acetone	5.7	mg/dL	004 - Urine
Ephedrine	220	ng/mL	004 - Urine
Phenylpropanolamine	640	ng/mL	004 - Urine
Amphetamine	>10000	ng/mL	004 - Urine
Methamphetamine	>10000	ng/mL	004 - Urine

See Detailed Findings section for additional information

Testing Requested:

Analysis Code	Description
0170FL	Alcohol Panel, Fluid
8052B	Postmortem, Expanded, Blood (Forensic)
1919FL	Electrolytes and Glucose Panel (Vitreous), Fluid (Forensic)
8052U	Postmortem, Expanded, Urine (Forensic)

Specimens Received:

ID	Tube/Container	Volume/ Mass	Collection Date/Time	Matrix Source	Miscellaneous Information
001	Gray Top Tube	9.75 mL	11/13/2018 10:30	IVC (Inferior Vena Cava) Blood	

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Workorder 18337489
Chain 18337489
Patient ID A18-199

ID	Tube/Container	Volume/ Mass	Collection Date/Time	Matrix Source	Miscellaneous Information
002	Gray Top Tube	9.75 mL	11/13/2018 10:30	IVC (Inferior Vena Cava) Blood	
003	Red Top Tube	1.5 mL	11/13/2018 10:20	Vitreous Fluid	
004	White Plastic Container	10 mL	11/13/2018 10:35	Urine	

All sample volumes/weights are approximations.

Specimens received on 11/20/2018.

Detailed Findings:

Analysis and Comments	Result	Units	Rpt. Limit	Specimen Source	Analysis By
Carbamazepine	2.5	mcg/mL	0.20	001 - IVC (Inferior Vena Cava) Blood	LC-MS/MS
Delta-9 Carboxy THC	5.7	ng/mL	5.0	001 - IVC (Inferior Vena Cava) Blood	LC-MS/MS
Delta-9 THC	0.72	ng/mL	0.50	001 - IVC (Inferior Vena Cava) Blood	LC-MS/MS
Phenylpropanolamine	20	ng/mL	5.0	001 - IVC (Inferior Vena Cava) Blood	LC-MS/MS
Amphetamine	610	ng/mL	5.0	001 - IVC (Inferior Vena Cava) Blood	LC-MS/MS
Methamphetamine	3700	ng/mL	5.0	001 - IVC (Inferior Vena Cava) Blood	LC-MS/MS
Creatinine (Vitreous Fluid)	2.3	mg/dL	0.050	003 - Vitreous Fluid	Colorimetry
Sodium (Vitreous Fluid)	149	mmol/L	80	003 - Vitreous Fluid	Chemistry Analyzer
Potassium (Vitreous Fluid)	>20	mmol/L	1.0	003 - Vitreous Fluid	Chemistry Analyzer
Chloride (Vitreous Fluid)	134	mmol/L	70	003 - Vitreous Fluid	Chemistry Analyzer
Glucose (Vitreous Fluid)	None Detected	mg/dL	35	003 - Vitreous Fluid	Chemistry Analyzer
Urea Nitrogen (Vitreous Fluid)	74	mg/dL	3.0	003 - Vitreous Fluid	Chemistry Analyzer
Acetone	5.7	mg/dL	5.0	004 - Urine	Headspace GC
Acetone	Confirmed	mg/dL	5.0	004 - Urine	Headspace GC
Ephedrine	220	ng/mL	50	004 - Urine	LC-MS/MS
Phenylpropanolamine	640	ng/mL	50	004 - Urine	LC-MS/MS
Amphetamine	>10000	ng/mL	50	004 - Urine	LC-MS/MS
Methamphetamine	>10000	ng/mL	50	004 - Urine	LC-MS/MS

Other than the above findings, examination of the specimen(s) submitted did not reveal any positive findings of toxicological significance by procedures outlined in the accompanying Analysis Summary.

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Workorder	18337489
Chain	18337489
Patient ID	A18-199

Reference Comments:

1. Acetone - Urine:

   Acetone is a solvent used for chemicals, paints, etc. It is also a product of diabetic- and fasting-induced ketoacidosis as well as a metabolite following isopropanol ingestion. In high concentrations, acetone can have CNS-depressing effects. Symptoms include lethargy, ataxia, headache, nausea and lightheadedness. Stupor and coma appear in severe cases. Acetone produced in the body as a result of uncontrolled diabetes can also be converted to isopropanol.

2. Amphetamine - IVC (Inferior Vena Cava) Blood:

   Amphetamine (Adderall, Dexedrine) is a Schedule II phenethylamine CNS-stimulant. It is used therapeutically in the treatment of narcolepsy and obesity and also in the treatment of hyperactivity in children. Amphetamine has a high potential for abuse. When used in therapy, initial doses should be small and increased gradually. In the treatment of narcolepsy, amphetamine is administered in daily divided doses of 5 to 60 mg. For obesity and children with attention deficits, usual dosage is 5 or 10 mg daily.

   Following a single oral dose of 10 mg amphetamine sulfate, a reported peak blood concentration of 40 ng/mL was reached at 2 hr. Following a single 30 mg dose to adults, an average peak plasma level of 100 ng/mL was reported at 2.5 hr. A steady-state blood level of 2000 - 3000 ng/mL was reported in an addict who consumed approximately 1000 mg daily.

   Overdose with amphetamine can produce restlessness, hyperthermia, convulsions, hallucinations, respiratory and/or cardiac failure. Reported blood concentrations in amphetamine-related fatalities ranged from 500 - 41000 ng/mL (mean, 9000 ng/mL). Amphetamine is also a metabolite of methamphetamine, benzphetamine and selegiline.

3. Amphetamine - Urine:

   Amphetamine is a Schedule II phenethylamine CNS-stimulant. It is used therapeutically in the treatment of narcolepsy and obesity and also in the treatment of hyperactivity in children. Amphetamine has a high potential for abuse. Amphetamine is also a metabolite of methamphetamine and selegiline.

   Overdose with amphetamine can produce restlessness, hyperthermia, convulsions, hallucinations, respiratory and/or cardiac failure.

4. Carbamazepine (Tegretol®) - IVC (Inferior Vena Cava) Blood:

   Carbamazepine is a tricyclic anticonvulsant agent. It is also prescribed for the treatment of pain associated with trigeminal neuralgia. It is extensively metabolized to the active Carbamazepine-10,11-Epoxide as well as other metabolites. Dosage should be adjusted to meet individual requirements. Total dosage should generally not exceed 1.2 g daily.

   Following a chronic oral dose of 5-20 mg/Kg (mean, 12 mg/Kg), reported plasma concentrations averaged 5.4 mcg/mL (range, 1.4 to 12 mcg/mL) for carbamazepine and 1.1 mcg/mL (range, 0.2 - 2.0 mcg/mL) for the epoxide.

   Signs and symptoms associated with acute carbamazepine overdose include dizziness, stupor, disorientation, hypo- or hypertension and coma. In a series of non-fatal overdoses, peak plasma concentrations of the parent compound ranged from 12 - 77 mcg/mL whereas the levels of the epoxide ranged from 4 - 34 mcg/mL. In an individual who died after ingesting 50 g of carbamazepine, a plasma level of 120 mcg/mL was reported; cardiorespiratory arrest occurred about 14 hr after hospital admission at which point the carbamazepine plasma concentration was 90 mcg/mL. In a series of 7 cases of fatal carbamazepine overdose the blood concentrations ranged from 35 - 70 mcg/mL.

   The reported blood to plasma ratio for carbamazepine is 0.6.

5. Chloride (Vitreous Fluid) - Vitreous Fluid:

   Normal: 105 - 135 mmol/L

6. Creatinine (Vitreous Fluid) - Vitreous Fluid:

   Normal: 0.6 - 1.3 mg/dL

Reference Comments:

7. Delta-9 Carboxy THC (Inactive Metabolite) - IVC (Inferior Vena Cava) Blood:

   Delta-9-THC is the principle psychoactive ingredient of marijuana/hashish. Delta-9-carboxy-THC (THCC) is the inactive metabolite of THC. The usual peak concentrations in serum for 1.75% or 3.55% THC marijuana cigarettes are 10 - 101 ng/mL attained 32 to 240 minutes after beginning smoking, with a slow decline thereafter. The ratio of whole blood concentration to plasma concentration is unknown for this analyte. THCC may be detected for up to one day or more in blood. Both delta-9-THC and THCC may be present substantially longer in chronic users. THCC is usually not detectable after passive inhalation.

8. Delta-9 THC (Active Ingredient of Marijuana) - IVC (Inferior Vena Cava) Blood:

   Marijuana is a DEA Schedule I hallucinogen. Pharmacologically, it has depressant and reality distorting effects. Collectively, the chemical compounds that comprise marijuana are known as Cannabinoids.

   Delta-9-THC is the principle psychoactive ingredient of marijuana/hashish. It rapidly leaves the blood, even during smoking, falling to below detectable levels within several hours. Delta-9-carboxy-THC (THCC) is the inactive metabolite of THC and may be detected for up to one day or more in blood. Both delta-9-THC and THCC may be present substantially longer in chronic users.
   THC concentrations in blood are usually about one-half of serum/plasma concentrations. Usual peak levels in serum for 1.75% or 3.55% THC marijuana cigarettes: 50 - 270 ng/mL at 6 to 9 minutes after beginning smoking, decreasing to less than 5 ng/mL by 2 hrs.

9. Ephedrine - Urine:

   Ephedrine is a naturally occurring, active stimulant of the sympathetic nervous system that may cause bronchodilation, vasoconstriction and increased cardiac activity. The drug has mild central nevous system stimulant effects. It is found in a number of Ephedra plant species. Ephedrine is used therapeutically as a nasal decongestant and bronchodilator. A number of food supplements containing Ephedra alkaloids (that provide between 8 and 24 mg per dose) are sold as stimulants and aids for weight loss.

   Ephedrine is metabolized by the liver primarily to phenylpropanolamine (norephedrine). From 70 - 80% of an oral dose is eliminated in the 48 hour urine as the parent compound, with about 4% being present as phenylpropanolamine.

10. Glucose (Vitreous Fluid) - Vitreous Fluid:

    Normal: <200 mg/dL

    Postmortem vitreous glucose concentrations >200 mg/dL are associated with hyperglycemia.

    Since postmortem vitreous glucose concentrations decline rapidly after death both in vivo and in vitro, care should be taken in the interpretation of results. Stability of vitreous glucose for up to 30 days has been noted by NMS Labs when specimens are maintained frozen (-20°C).

11. Methamphetamine - IVC (Inferior Vena Cava) Blood:

    d-methamphetamine is a DEA schedule II stimulant drug capable of causing hallucinations, aggressive behavior and irrational reactions. Chemically, there are two forms (isomers) of methamphetamine: l- and d-methamphetamine. The l-isomer is used in non-prescription inhalers as a decongestant and has weak CNS-stimulatory activity. The d-isomer has been used therapeutically as an anorexigenic agent in the treatment of obesity and has potent CNS-, cardiac- and circulatory-stimulatory activity. Amphetamine and norephedrine (phenylpropanolamine) are metabolites of methamphetamine. d-methamphetamine is an abused substance because of its stimulatory effects and is also addictive.

    A peak blood concentration of methamphetamine of 20 ng/mL was reported at 2.5 hr after an oral dosage of 12.5 mg. Blood levels of 200 - 600 ng/mL have been reported in methamphetamine abusers who exhibited violent and irrational behavior. High doses of methamphetamine can also elicit restlessness, confusion, hallucinations, circulatory collapse and convulsions.

    *In this case, the level of methamphetamine determined has not been differentiated according to its isomeric forms. Differentiation of the isomers of methamphetamine is available upon request.

Reference Comments:

12. Methamphetamine - Urine:

    d-methamphetamine is a DEA schedule II stimulant drug capable of causing hallucinations, aggressive behavior and irrational reactions. Chemically, there are two forms (isomers) of methamphetamine: l- and d-methamphetamine. The l-isomer is used in non-prescription inhalers as a decongestant and has weak CNS-stimulatory activity. The d-isomer has been used therapeutically as an anorexigenic agent in the treatment of obesity and has potent CNS-, cardiac- and circulatory-stimulatory activity. Amphetamine and norephedrine (phenylpropanolamine) are metabolites of methamphetamine. d-Methamphetamine is an abused substance because of its stimulatory effects and is also addictive.

    High doses of methamphetamine can also elicit restlessness, confusion, hallucinations, circulatory collapse and convulsions.

    *In this case, the level of methamphetamine determined has not been differentiated according to its isomeric forms. Differentiation of the isomers of methamphetamine is available upon request.

13. Phenylpropanolamine (Norephedrine; PPA) - IVC (Inferior Vena Cava) Blood:

    Phenylpropanolamine is a synthetic sympathomimetic drug; potencies and pharmacological effects are approximately equivalent to ephedrine. The compound is normally available as the hydrochloride salt of the racemic mixture. Phenylpropanolamine is not a controlled substance. At one time the drug was administered orally in doses between 6 and 50 mg for use as a decongestant, often in combination with antihistamines and analgesics in 'cold' remedies. In addition, the drug was widely used as an over-the-counter (OTC) diet aid in doses between 25 and 75 mg. Phenylpropanolamine was removed from the US market beginning in November 2000 due to concerns over its cardiovascular toxicity. Phenylpropanolamine (also known as norephedrine) is a metabolite of ephedrine and a minor metabolite of amphetamine.

    Reported peak plasma concentrations of phenylpropanolamine following a 50 mg dose averaged 180 ng/mL at 1 to 2 hrs. Average peak plasma concentrations of 280 ng/mL were reported 6 hrs following administration of 150 mg phenylpropanolamine in a sustained-release formulation to 6 volunteers.

    Phenylpropanolamine is capable of causing dizziness, palpitations, tachycardia, nervousness, insomnia, hypertension, and cardiac arrhythmias. Single doses of 50 to 75 mg have produced anxiety, agitation, hallucinations, and tremor in susceptible persons. Slightly higher doses have caused severe headache and hypertensive crisis in a number of individuals. In one deliberate fatal overdose case, a blood concentration of 48000 ng/mL was reported.

14. Phenylpropanolamine (Norephedrine; PPA) - Urine:

    Phenylpropanolamine is a synthetic sympathomimetic drug; potencies and pharmacological effects are approximately equivalent to ephedrine. The compound is normally available as the hydrochloride salt of the racemic mixture. Phenylpropanolamine is not a controlled substance. At one time the drug was administered orally in doses between 6 and 50 mg for use as a decongestant, often in combination with antihistamines and analgesics in 'cold' remedies. In addition, the drug was widely used as an over-the-counter (OTC) diet aid in doses between 25 and 75 mg. Phenylpropanolamine was removed from the US market beginning in November 2000 due to concerns over its cardiovascular toxicity. Phenylpropanolamine (also known as norephedrine) is a metabolite of ephedrine and a minor metabolite of amphetamine.

    Phenylpropanolamine is capable of causing dizziness, palpitations, tachycardia, nervousness, insomnia, hypertension, and cardiac arrhythmias. Single doses of 50 to 75 mg have produced anxiety, agitation, hallucinations, and tremor in susceptible persons. Slightly higher doses have caused severe headache and hypertensive crisis in a number of individuals.

15. Potassium (Vitreous Fluid) - Vitreous Fluid:

    Normal: <15 mmol/L
    Quantitative results for Potassium will be affected if performed on gray top tubes since these collection tubes contain potassium oxalate.

16. Sodium (Vitreous Fluid) - Vitreous Fluid:

    Normal: 135 - 150 mmol/L
    Quantitative results for sodium will be affected if performed on gray top tubes since these collection tubes contain sodium fluoride.

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Workorder	18337489
Chain	18337489
Patient ID	A18-199

Reference Comments:

17. Urea Nitrogen (Vitreous Fluid) - Vitreous Fluid:
    Normal: 8 - 20 mg/dL

Sample Comments:

004 Due to the nature of this specimen, some analytes may not be detected by the LC/TOF-MS screen.

Unless alternate arrangements are made by you, the remainder of the submitted specimens will be discarded one (1) year from the date of this report; and generated data will be discarded five (5) years from the date the analyses were performed.

Workorder 18337489 was electronically signed on 11/30/2018 08:43 by:

L. Paul Miller

Paul Miller,
Certifying Scientist

Analysis Summary and Reporting Limits:

All of the following tests were performed for this case. For each test, the compounds listed were included in the scope. The Reporting Limit listed for each compound represents the lowest concentration of the compound that will be reported as being positive. If the compound is listed as None Detected, it is not present above the Reporting Limit. Please refer to the Positive Findings section of the report for those compounds that were identified as being present.

Acode 0170FL - Alcohol Panel, Fluid - Vitreous Fluid

-Analysis by Headspace Gas Chromatography (GC) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
Acetone	5.0 mg/dL	Isopropanol	5.0 mg/dL
Ethanol	10 mg/dL	Methanol	5.0 mg/dL

Acode 1919FL - Electrolytes and Glucose Panel (Vitreous), Fluid (Forensic) - Vitreous Fluid

-Analysis by Chemistry Analyzer for:

Compound	Rpt. Limit	Compound	Rpt. Limit
Chloride (Vitreous Fluid)	70 mmol/L	Sodium (Vitreous Fluid)	80 mmol/L
Glucose (Vitreous Fluid)	35 mg/dL	Urea Nitrogen (Vitreous Fluid)	3.0 mg/dL
Potassium (Vitreous Fluid)	1.0 mmol/L		

-Analysis by Colorimetry (C) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
Creatinine (Vitreous Fluid)	0.050 mg/dL		

Acode 52015B - Carbamazepine and Metabolite Confirmation, Blood - IVC (Inferior Vena Cava) Blood

-Analysis by High Performance Liquid Chromatography/ Tandem Mass Spectrometry (LC-MS/MS) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
Carbamazepine	0.20 mcg/mL	Carbamazepine-10,11-Epoxide	0.20 mcg/mL

Acode 52198B - Cannabinoids Confirmation, Blood - IVC (Inferior Vena Cava) Blood

-Analysis by High Performance Liquid Chromatography/ Tandem Mass Spectrometry (LC-MS/MS) for:

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Workorder 18337489
Chain 18337489
Patient ID A18-199

Analysis Summary and Reporting Limits:

Compound	Rpt. Limit	Compound	Rpt. Limit
11-Hydroxy Delta-9 THC	1.0 ng/mL	Delta-9 THC	0.50 ng/mL
Delta-9 Carboxy THC	5.0 ng/mL		

Acode 52250U - Alcohols and Acetone Confirmation, Urine

-Analysis by Headspace Gas Chromatography (GC) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
Acetone	5.0 mg/dL	Isopropanol	5.0 mg/dL
Ethanol	10 mg/dL	Methanol	5.0 mg/dL

Acode 52485B - Amphetamines Confirmation, Blood - IVC (Inferior Vena Cava) Blood

-Analysis by High Performance Liquid Chromatography/ Tandem Mass Spectrometry (LC-MS/MS) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
Amphetamine	5.0 ng/mL	Norpseudoephedrine	5.0 ng/mL
Ephedrine	5.0 ng/mL	Phentermine	5.0 ng/mL
MDA	5.0 ng/mL	Phenylpropanolamine	5.0 ng/mL
MDEA	5.0 ng/mL	Pseudoephedrine	5.0 ng/mL
Methamphetamine	5.0 ng/mL		

Acode 52485U - Amphetamines Confirmation, Urine

-Analysis by High Performance Liquid Chromatography/ Tandem Mass Spectrometry (LC-MS/MS) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
Amphetamine	50 ng/mL	Norpseudoephedrine	50 ng/mL
Ephedrine	50 ng/mL	Phentermine	50 ng/mL
MDA	50 ng/mL	Phenylpropanolamine	50 ng/mL
MDEA	50 ng/mL	Pseudoephedrine	50 ng/mL
Methamphetamine	50 ng/mL		

Acode 8052B - Postmortem, Expanded, Blood (Forensic) - IVC (Inferior Vena Cava) Blood

-Analysis by Enzyme-Linked Immunosorbent Assay (ELISA) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
Barbiturates	0.040 mcg/mL	Salicylates	120 mcg/mL
Cannabinoids	10 ng/mL		

-Analysis by Headspace Gas Chromatography (GC) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
Acetone	5.0 mg/dL	Isopropanol	5.0 mg/dL
Ethanol	10 mg/dL	Methanol	5.0 mg/dL

-Analysis by High Performance Liquid Chromatography/Time of Flight-Mass Spectrometry (LC/TOF-MS) for: The following is a general list of compound classes included in this screen. The detection of any specific analyte is concentration-dependent. Note, not all known analytes in each specified compound class are included. Some specific analytes outside these classes are also included. For a detailed list of all analytes and reporting limits, please contact NMS Labs.
Amphetamines, Anticonvulsants, Antidepressants, Antihistamines, Antipsychotic Agents, Benzodiazepines, CNS Stimulants, Cocaine and Metabolites, Hallucinogens, Hypnosedatives, Hypoglycemics, Muscle Relaxants, Non-Steroidal Anti-Inflammatory Agents, Opiates and Opioids.

NMS LABS

CONFIDENTIAL

Workorder 18337489
Chain 18337489
Patient ID A18-199

Analysis Summary and Reporting Limits:

Acode 8052U - Postmortem, Expanded, Urine (Forensic)

-Analysis by Enzyme Immunoassay (EIA) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
Barbiturates	0.30 mcg/mL	Cannabinoids	50 ng/mL

-Analysis by Enzyme-Linked Immunosorbent Assay (ELISA) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
Salicylates	120 mcg/mL		

-Analysis by Headspace Gas Chromatography (GC) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
Acetone	5.0 mg/dL	Isopropanol	5.0 mg/dL
Ethanol	10 mg/dL	Methanol	5.0 mg/dL

-Analysis by High Performance Liquid Chromatography/Time of Flight-Mass Spectrometry (LC/TOF-MS) for: The following is a general list of compound classes included in this screen. The detection of any specific analyte is concentration-dependent. Note, not all known analytes in each specified compound class are included. Some specific analytes outside these classes are also included. For a detailed list of all analytes and reporting limits, please contact NMS Labs.
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